Organic Chemistry Test #1 – Structures and Nomenclature
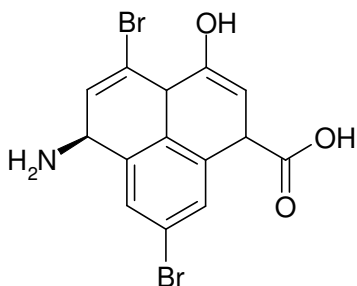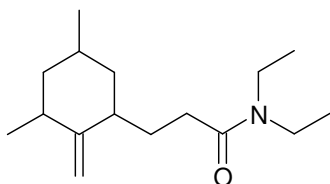
1. For each of the following structures determine the degree of
    unsaturation and use this information to determine the
    complete chemical formula. Please note that the saturation
    formula is given in the next question.
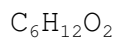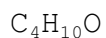

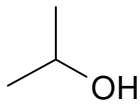deg. unsat = _____

formula =

deg. unsat = _____
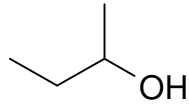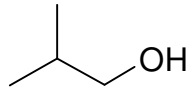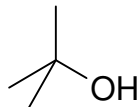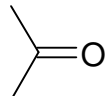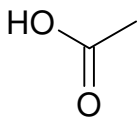
formula =

2. $H = [2C + 2] - 2(deg. unsat) - X + N$

    Use the above saturation formula to determine the degree of
    unsaturation and hence the possible combinations of
    functional groups (and rings) that would make possible each
    formula. (1 mark per correct response, some marks may be
    deduced for extra incorrect answers)

$C_4H_{10}O$
$C_6H_{12}O_2$

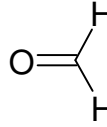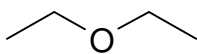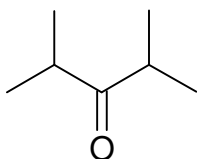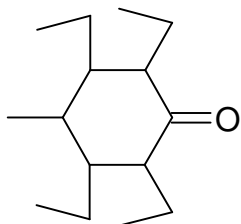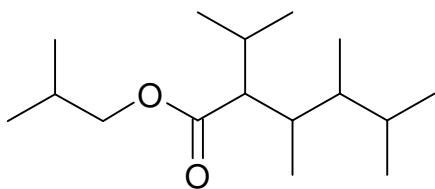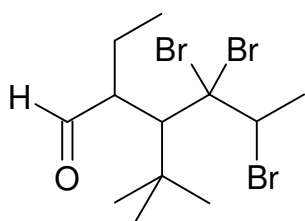3. Provide common names and I.U.P.A.C. names for each of the following. If more than one common name exists, include both. Be sure to follow the rules when writing I.U.P.A.C. names. One mark per name

	Common Names	I.U.P.A.C.
OH (structure)		
OH (structure)		
OH (structure)		
OH (structure)		
OH (structure)		
O (structure)		
HO / O (structure)		
H / O / H (structure)		
≡ (structure)		
O (ether structure)		/////////
O (structure)		

4.   Write complete I.U.P.A.C. names for each of the following:
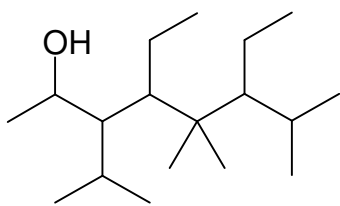
5. Provide all structural isomer for this formula. Be sure to consider and unsaturation considerations that should be considered. I think that there are 23. Present your work in an organized fashion. Marks will be deduced for disorder. Also, marks will be deduced for duplicate (or triplicate etc. structures). Use only five and six member rings. The correct formula you have been waiting for is!!!!

$$C_5H_9X$$
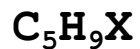
Attach of the Killer Ketones!!! (march march march)